

Jake Peterson

Forensic Engineering Expertise

Structural Analysis/Design

Review appropriate documents, including project plans and specifications, as they relate to the building structure for purposes of failure analysis and extent of resulting damages. In addition, being a licensed professional and structural engineer, replacement designs are provided upon request. Examples of past work includes failure analysis of collapsed structures (concrete, steel, wood, masonry), and various building components (windows, doors, glass, piping, roofing, exterior and interior cladding) as well as damage assessment of building structures after a fire, including expert witness testimony related to the aforementioned items.

Origin & Cause

Determine the source and responsible party or element related to the failure of a structural or architectural element, or water damage in a building. Examples of past work include failure of roofing and wall cladding, causing moisture entry, humidity and condensation-related losses, and groundwater entry, including expert witness testimony related to the aforementioned items.

Building Fenestration/Building Envelope

The building envelope is a building's first line of defense to moisture entry. Identifying the type of system (single versus multiple barrier) and how the various adjoining materials' water, vapor, thermal, and air control layers connect is key to effective moisture management. Examples of past work include residential window installations, exterior cladding installation, and roofing materials.

Building Pathology/Construction Defects

The building pathologist relies on an in-depth knowledge of building design, construction, use, and changes, as well as assessing the environment of use and the materials and how these interrelate to systematically identify, investigate, and diagnose defects in a building. Past work includes design and specification of repairs as an owner's representative and expert witness testimony related to the aforementioned items.

Inspection and Evaluation of Roofing Systems

This includes steep and low slope roofs as well as various types of roofing materials, including both common and unique roofing applications. Past work involved offering opinions and repairs related to installation deficiencies and storm-related damages, including for hail and wind.

Qualifications & Training

- Repair of Concrete, University of Wisconsin, 2024
- Waterproofing Preconstruction thru Construction Observation, AECOM, 2024
- Solar Facades, Elemex, 2024
- A New Hope: The Principles of a Structural Glass Design Manual, 2024
- Stabilizing Masonry Construction: How to Recognize Issues and What to Do, International Masonry Institute (IMI), 2024
- Flashing & Moisture Control Best Practices: Masonry Wall Assemblies, International Masonry Institute (IMI), 2024
- Modern Post-Frame Structural Design Practice: An Introduction, National Frame Building Association, 2024

- Flashing Follies: The Disproportionate Impact of Flashing Failures, Wiss Janney Elstner Associates Inc., 2024
- SIPs - Considerations for a High-Performance Building Enclosure, Enercept, 2024
- Universal Method for Shallow Post and Pier Foundation Design, National Frame Building Association, 2024
- PMMA/PMA Liquid-Applied Roofing & Waterproofing Membranes, Soprema Inc., 2023
- Joist and Joist Girder Reinforcement, Steel Joist Institute, 2023
- Structural Stabilization of Historic Masonry Buildings, International Masonry Institute (IMI), 2023
- Design of Steel Deck for Concentrated and Nonuniform Loading, Steel Joist Institute, 2023
- Diaphragm Design of Post Frame Using Sway & Shear Modifiers –Engineering, National Frame Building Association, 2023
- Diaphragm Design of Post Frame Using DAFI – Engineering Details, National Frame Building Association, 2023
- Designing with Undercut Mechanical Anchors, DeWalt, 2023
- Maximizing Existing Plaza Decks for Building Rehabilitation, Simpson Gumpertz & Heger, 2023
- Under Pressure: When Mechanical Systems Cause Building Enclosure, Simpson Gumpertz & Heger, 2023
- Designing and Specifying FRP for Bridge Strengthening, Sika USA, 2023
- Break from the Mold: Hygrothermal Analysis of Building Enclosures, Simpson Gumpertz & Heger, 2023
- Concrete Repair and Rehabilitation, International Masonry Institute (IMI), 2023
- Lab Live: Low-Slope Roofing, Simpson Gumpertz & Heger, 2023
- Masonry Notes, Details, and Prototypes, International Masonry Institute (IMI), 2022
- ACI 562 Provisions for External Strengthening of Concrete Structures, Simpson Strong-Tie, 2022
- Joining Metals: Structural Considerations for Bolting and Welding Methods, Simpson Gumpertz & Heger, 2022
- 2022 IIBEC/AEI Building Enclosure Symposium, International Institute of Building Enclosure Consultants, 2022
- 2022 ICRI Technical Seminar -Concrete Repair Materials and Corrosion Protection, International Concrete Repair Institute, 2022
- Principles of Waterproofing Injections, Sika Sarnafil, 2022
- Terra Cotta: Understanding and Rehabilitating Historic Facades, Simpson Gumpertz & Heger, 2022
- Silicone Construction Sealants, Momentive Performance Materials, 2022
- Not Just a Finish: Structural Clay Masonry Design, International Masonry Institute (IMI), 2022
- Wisconsin Commercial Code Refresher, University of Wisconsin, 2021-2023 (annually)
- Navigating The GC/ Applicator/ Consultant Relationship in Exterior Enclosure Projects, International Institute of Building Enclosure Consultants, 2021
- Roofing Technical & Code Issues – Now and The Future..., International Institute of Building Enclosure Consultants, 2021
- Roofing & New Wind Uplift Code Requirements, International Institute of Building Enclosure Consultants, 2021
- Exterior Masonry Wall Assessment and Repair, Simpson Gumpertz & Heger, 2021
- The Do's and Don'ts of Concrete Repair, Sika Sarnafil, 2021
- Terra Cotta Construction and Restoration 19TCCR10, International Masonry Institute (IMI), 2021
- Sika WT-240 P - Crystalline Permeability Reducing Admixture, Sika Sarnafil, 2021

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- Masonry Movement Joints: Structural Edition 21MMJSE10, International Masonry Institute (IMI), 2021
- Historic Mortar Replication and Pointing 20HMRP15, International Masonry Institute (IMI), 2021
- Erection Engineering: Stability During Construction, Structural Engineers Association of Wisconsin, 2021
- Post Tensioned Concrete Structures, Structural Engineers Association of Wisconsin, 2021
- Checklist for Structural Masonry Design, Structural Engineers Association of Wisconsin, 2021
- Don't Get Blindsided by Below Grade Leaks, Henry Building Envelope Systems, 2021
- Masonry Shear Wall Design 21MSWD10, International Masonry Institute (IMI), 2021
- 19MCAM10 Masonry Cleaning Approach and Methodology, International Masonry Institute (IMI), 2021
- Properly Designing Connections to Masonry Walls, International Masonry Institute (IMI), 2021
- The Use of Precast Double Tees for Floor and Roof Structures, Wells, 2021
- Modeling Masonry for Design and Construction 21MMFD&C10, International Masonry Institute (IMI), 2021
- Nail Laminated Timber Design, Structural Engineers Association of Wisconsin, 2021
- Introduction to Helical Foundation Systems, Structural Engineers Association of Wisconsin, 2021
- IBC Chapter 17: Special Inspections and Updates to the Wisconsin Building Code, Structural Engineers Association of Wisconsin, 2021
- Complying with the International Existing Building Code (IEBC), University of Wisconsin, 2020
- Art and Science of Matching Historic Concrete, International Concrete Restoration Institute, 2020
- 20AEM05 Appearance Expectations for Masonry: Light and Shadows, International Masonry Institute (IMI), 2020
- 20CWID05 6 Key Masonry Cavity Wall Interface Details, International Masonry Institute (IMI), 2020
- Shelf Angle Detailing: Design & Construction Considerations, International Masonry Institute (IMI), 2020
- SIK112 Exploring Concrete Roof Deck Moisture Issues, Sika Sarnafil, 2020
- Welcome and Evaluation Techniques for Structures Undergoing Extreme Environments, International Concrete Restoration Institute, 2020
- Welcome and AlkaliSilica Reaction: Cause, Effects, Mitigation, and Repair, International Concrete Restoration Institute, 2020
- Fiber Reinforcing Technology Today, Structural Engineers Association of Wisconsin, 2020
- Forensic Engineering for Historic Properties, International Masonry Institute (IMI), Webinar, 2020
- Low Slope Roofing Systems, University of Wisconsin, 2019
- Introduction to the 2015 and 2018 International Building Code (IBC), University of Wisconsin, 2019
- Wind Design for Components, ASCE, Webinar, 2019
- Understanding the AISC Direct Analysis Method of Design, SEA-WI, Webinar, 2019
- Safer, Stronger Decks: Ledger Connections for Wood and Masonry, Simpson Strong-Tie, 2019
- Parking Structure Design, Construction and Maintenance, Half Moon Education, Inc., 2019
- Continuous Insulation in Framed Exterior Walls, BNP Media, Webinar, 2019
- Historic Terracotta Restoration: Guidelines and Details, Team IMI, Webinar, 2019

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- RISA Structural Engineering Software Regional Training Course, Chicago, IL, 2018
- Glazing Symposium, Building Enclosure Council WI, 2018

Education

Master of Science Degree in Structural Engineering
Milwaukee School of Engineering, Milwaukee, WI
May 2009

Bachelor of Science Degree in Architectural Engineering
Milwaukee School of Engineering, Milwaukee, WI
May 2009

Licenses & Certifications

PE - Professional Engineer

Licensed by the State of Wisconsin – 46507-6
Licensed by the State of Indiana - PE11900127
Licensed by the State of Iowa - P25542
Licensed by the State of Kentucky - 36661
Licensed by the State of North Dakota - PE-29046
Licensed by the State of Minnesota - 56948
Licensed by the State of Missouri - 2021019750
Licensed by the State of South Dakota - 15368

Employment History

Forensic Engineer

Nederveld, Inc.

2025 - Present

Duties include forensic engineering analysis relating to building pathology, structural damage due to fire, structural damage from vehicle impacts, storm damage (wind, snow, hail), seismic, and water loss events, calculations, and plan of repair design.

Director of Engineering, Professional Engineer, Engineering Assistant

Roofing Consultants Ltd. dba RCL Engineering Group, Waukesha, WI

2017 - 2024

Duties included structural engineering design; investigation and analysis; forensic engineering; building enclosure consulting, investigation, and analysis; building condition investigation and analysis; specifications, plan and detail design; expert testimony; project management; and quality assurance/quality control inspections.

Senior Sales Representative, Inside Sales Representative

Inpro Corporation, Muskego, WI

2011 - 2017

Applications engineering for building expansion joint systems; design assistance to architects, engineers, and designers; product chemical compatibility and life safety analysis; estimating and project management.

Professional Affiliations

Member: American Society of Civil Engineers (ASCE)

Member: Structural Engineers Association of Wisconsin

Member: The Masonry Society (TMS)

Member: International Institute Building Enclosure Consultants (IIBEC)

Expert Witness Experience

Arbitration

January 2022

Kim Marotta vs Johnson Design Inc.

Expert Witness for Kim Marotta

Metropolitan Builders Association of Greater Milwaukee

Depositions

October 2024

Caroline Landers et al vs. Lake County Sales and Remodeling, Inc. et al
Waukesha County Circuit Court, Case No. 2022-CV-000447

April 2024

Sean O’Gorman vs. West Bend Mutual Insurance Company et al
Milwaukee County Circuit Court, Case No. 2022-CV-007674

May/June 2023

Dana and Nancy Levar et al v. John H. and Renee D. Kinney et al
Walworth County Circuit Court, Case No. 2020-CV-000597

March 2023

Canadian American Homes v. Acuity, a Mutual Insurance
Brown County Circuit Court, Case No. 2022-CV-000791

January 2023

Kelley and Kathryn Krouth v. Radue Homes Inc. & West Bend
Brown County Circuit Court, Case No. 2020-CV-001089

January 2023

Seymour v. USAA, et al.

Racine County Circuit Court, Case No. 2021-CV-001479

November 2022

AVIS Rent A Car System, LLC v. Behnke Trust

Milwaukee County Circuit Court, Case No. 2021-CV-004281

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